

Application No.: 09/543,006
Docket No.: JCLA5712

In The Claims

Claim 1. (currently once amended) A closed circuit control device for controlling the scanning speed of a plurality of carriers inside a scanner, comprising:

a plurality of optical meters attached to a transparent glass panel and an optical sensor inside the scanner, wherein at least two of the optical meters are overlapped to produce digital signals with a cyclical directional pattern, whereby the optical scanner is capable of continuously picking up images of the optical meters during a scanning session and generating corresponding sense signals for controlling speed of a plurality of carriers, and detecting a moving direction according to the cyclical directional pattern.

Claim 2. (Original) The device of claim 1, wherein each optical meter has a pattern of alternating black and white strips thereon.

Claim 3. (Original) The device of claim 1, wherein each optical meter includes a plurality of bands with each band having a pattern of alternating black and white strips thereon.

Claim 4. (Original) The device of claim 3, wherein between a center of a white strip and a center of a black strip in a black and white band lies a black strip or a white strip of another black and white band.

Claim 5. (Original) The device of claim 1, wherein the optical sensor includes a charge couple device (CCD).

Claim 6. (Original) The device of claim 1, wherein the optical sensor includes a contact image sensor (CIS).

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Claim 7. (Original) A closed circuit control method for controlling the carrier of a scanner, comprising:

forming an image of an optical meter attached to the carrier in an optical sensor and converting the image into sense signals;

transmitting the sense signals to a computational device for converting frequency of a sense signal to a carrier speed;

comparing a computed carrier speed with a preset speed;

reducing speed of a driving motor if the computed carrier speed is greater than the preset speed;

increasing speed of the driving motor if the computed carrier speed is smaller than the preset speed; and

maintaining speed of the driving motor if the computed carrier speed and the preset speed are identical.

Claim 8. (Original) The method of claim 7, wherein each optical meter includes a pattern of alternating black and white strips thereon.

Claim 9. (Original) The method of claim 7, wherein each optical meter includes a plurality of bands with each band having a pattern of alternating black and white strips thereon.

Claim 10. (Original) The method of claim 9, wherein between a center of a white strip and a center of a black strip in a black and white band lies a black strip or a white strip of another black and white band.

Claim 11. (Original) The method of claim 7, wherein the optical sensor includes a charge couple device (CCD).

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Claim 12. (Original) The method of claim 7, wherein the optical sensor includes a contact image sensor (CIS).